

C L A I M S

1. Process for combustion of a liquid Fischer-Tropsch derived hydrocarbon fuel wherein the following steps are performed:

5 (a) obtaining a mixture of liquid hydrocarbon droplets in an oxygen containing gaseous phase,

(b) evaporating the liquid hydrocarbon droplets to obtaining a gaseous mixture comprising oxygen and hydrocarbons, and

10 (c) total combustion of the gaseous mixture obtained in step (b).

2. Process according to claim 1, wherein step (a) is performed by atomisation of the liquid Fischer-Tropsch derived fuel by means of a spray nozzle and subsequently mixing the atomised fuel with air.

15 3. Process according to any one of claims 1-2, wherein step (b) is performed in a cool flame at a temperature of between 300 and 480 °C.

4. Process according to any one of claims 1-3, wherein step (c) is performed in a porous material.

20 5. Process according to claim 4, wherein the heat of combustion is used to produce steam, which steam is subsequently super heated and wherein said super heated steam is used to power an piston or expansion engine.

25 6. Process according to any one of claims 1-3, wherein step (c) is performed at a porous surface.

7. Process according to claim 6, wherein the radiant heat at the porous surface is used to heat spaces.

8. Process according to any one of claims 1-3, wherein step (c) is performed such that the flame is aerodynamically stabilised.

5 9. Process according to any one of claims 1-8, wherein the fuel comprises a Fischer-Tropsch product containing more than 80 wt% iso and normal paraffins.

10. Process according to claim 9, wherein the fuel has a content of Fischer-Tropsch product of above 80 wt%.

10 11. Process according to any one of claims 1-10, wherein the fuel does not contain a metal based combustion improver and wherein in step (c) a flame detector is present of the ionisation sensor type.